REVOX A77

Is it quite useful to describe the REVOX A77? 25 years ago, each recording studio contained two or three of them; to make copies or to generate echoes or to delay the signal sent to the reverberations with plate or springs. Several accessories appeared progressively: plates and cores CCIR or NAB and a kit to use loops of magnetic tape

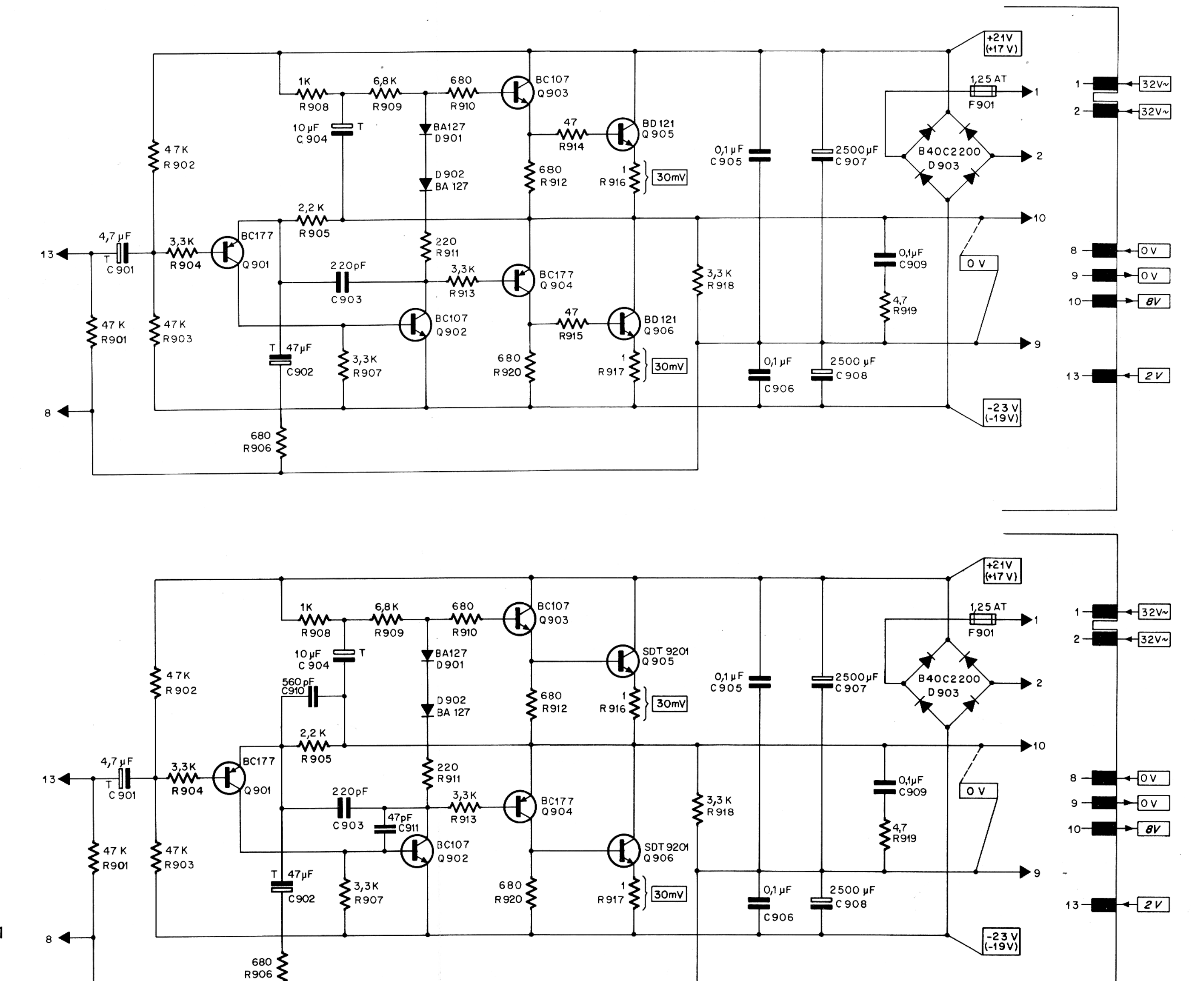
It left then a model 38 and 19 cm/s CCIR, generalized in the studios and, of course, most interesting, there is a model with 4 tracks stereo (1/4 of track) and a model Dolby B; to avoid both! For our use, model 19-38 is the only interesting one. It is necessary to point out that the Revox A77 is a "dual track" and not a true stereo machine (the difference is in the precise width of each track and the distance between these tracks). It is the same, and it's there that difficulties can arise, for the head alignment which is a dual track and not single track; a small central band must thus not be unobtrusive and undesirable deaf noises can appear at the time a band already has been recorded or magnetized by a continuous-current field.

Lastly, do not miss the end of this page: if you are owner of an A77, you will find there, in pdf format, all the electronic diagrams necessary to its repair.

DESIGN FEATURES

Feature		Specification	
General principle:		mechanism with 3 motors, all electronically controlled	
Tape speeds:		19 cm/s (7 1/2 in/s) 9,5 cm/s (3 3/4 in/s)	±0,2 %
Wow and Flutter:		« ± 0,08 % @ 19 cm/s « ± 0, 1 % @ 9,5 cm/s	
Drift:		<= 0,2%	
Diameter of the reels:		maximum 26,5 cm (10 1/2 in)	
Position of operation:		Horizontal or vertical	
Amplifiers:		equipped entirely with transistors with silicon structure double diffusion	
Response curve recording-reading:		30 Hz @ 20 kHz +2/-3 dB 50 Hz @ 15 kHz ± 1 , 5 dB	à 19 cm/s
		30 Hz @ 16 kHz +2/-3 dB 50 Hz @ 10 kHz ± 1,5 dB	à 9,5 cm/s
Harmonic distortion: (maximum level @ 1 kHz)		<= 2 % @ 19 cm/s <= 3 % @ 9,5 cm/s	
Corrections:		recording NAB, commutable reading NAB or IEC	
Signal ratio/noise: (balanced with filter DC IF)		>= 58 dB @ 19 cm/s >= 56 dB @ 9,5 cm/s	
Retreat of cross talk (@ 1 kHz):		>= 60 dB, mono >= 45 dB, stereo	
Oscillation frequency:		120 kHz, push-pull oscillator	
Inputs per channel:	cinch and jack DIN 5 poles cinch	Microphones commutable LO/HI LOW: 50 @ 600 ohms 0,15 mV HIGH: 100 kohms 2,5 mV RADIO: 33 kohms 2,5 mV AUX: 1 Mohms 35 mV	
Outputs per channel:	DIN 5 poles cinch jack	OUTPUT max. 2,5 V / Ri 600 ohms RADIO max. 1,2 V / Ri 2,5 kohms PHONES ear-phones 200 to 600 ohms	
remote Control:		all remotely controllable functions by impulses	
Amplifiers of loudspeakers:		plug-in, delivered on request	
Power of exit: (load 8 ohms distortion <= 1 %)		musical power20 W (10 W per channel) in sinusoidal mode16 W (8 W per channel)	
Output impedance:		4 to 16 ohms	

Built-in loudspeakers (model bag):	2 loudspeakers per channel (disconnected automatically at the time of the connection of external loudspeakers)
Component: (with the amplifiers of loudspeakers)	54 transistors, 32 diodes, 4 rectifiers with silicon, 1 photo resistor, 4 relays
Power supply:	stabilized
Tensions of the network:	110, 130, 150, 220, 240, 250 V-, 50 and 60 Hz
Consumption:	70 W without the amplifiers of loudspeakers between 70 and 100 W with the amplifiers
Fuses:	0,5 A for 220 to 250 V 1,O A for 110 to 150 V
Weight:	Approximately 15 kg



Loudspeaker Amplifier with
Final Transistors BD 121

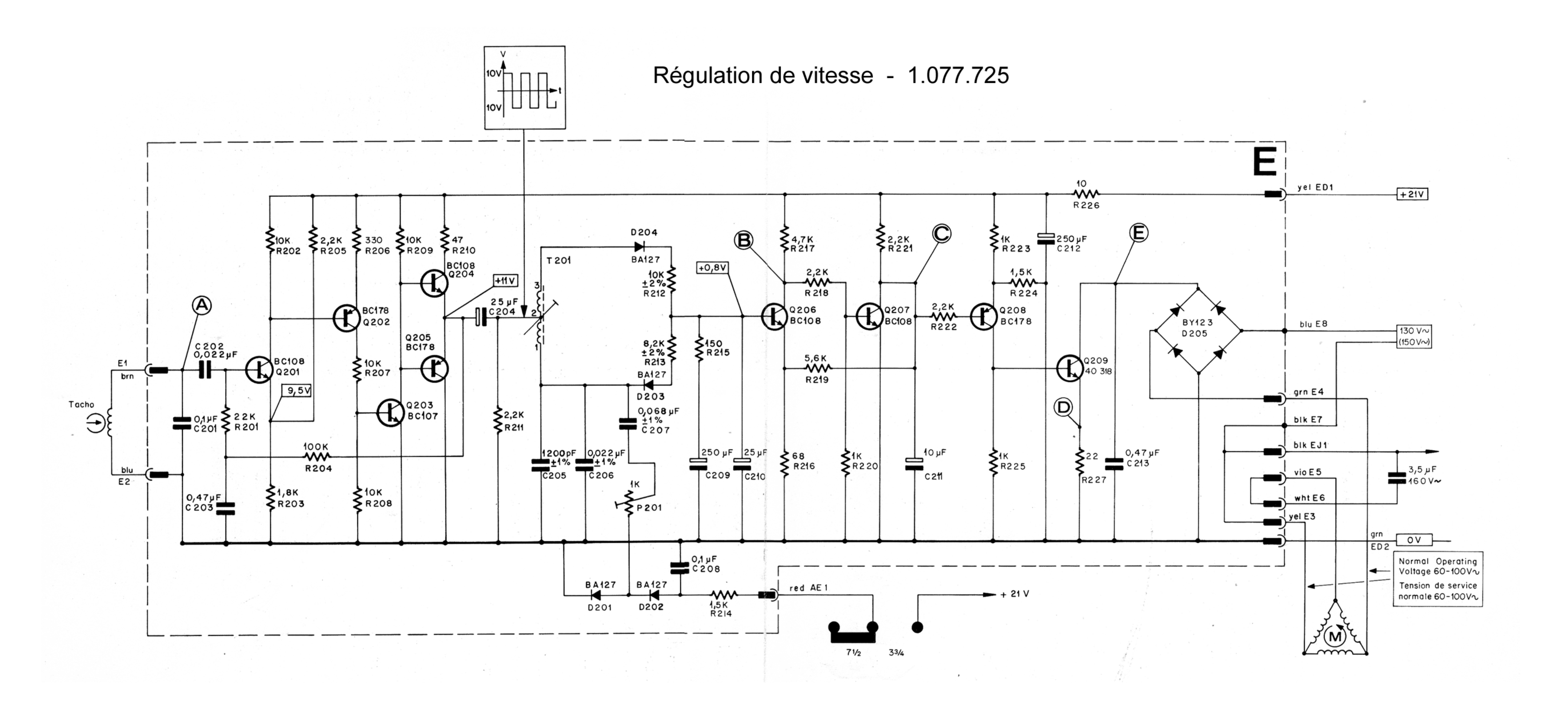
Amplificateur de haut-parleur
avec transistors de puissance BD 121

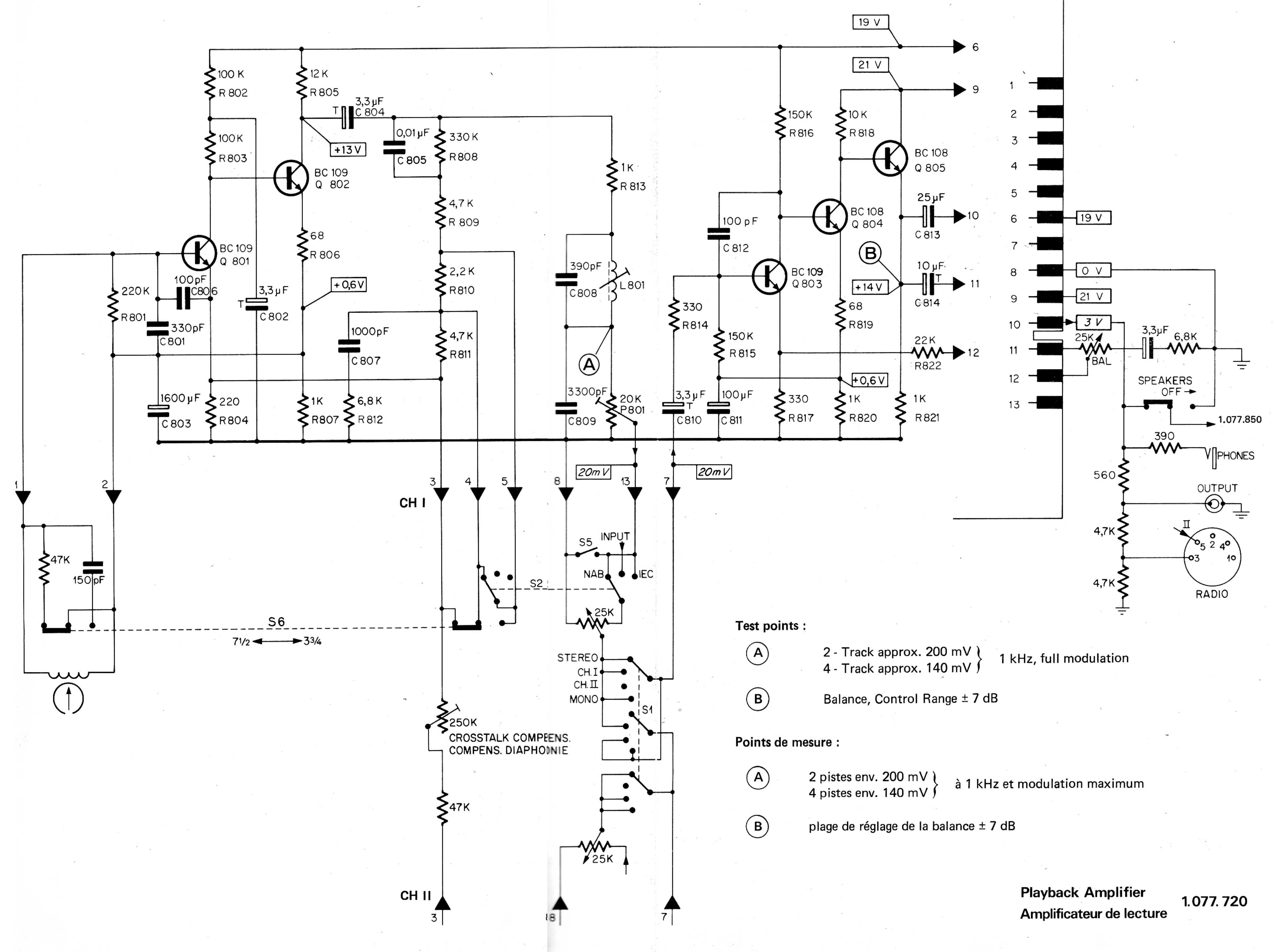
Loudspeaker Amplifier with
Final Transistors SDT 9201

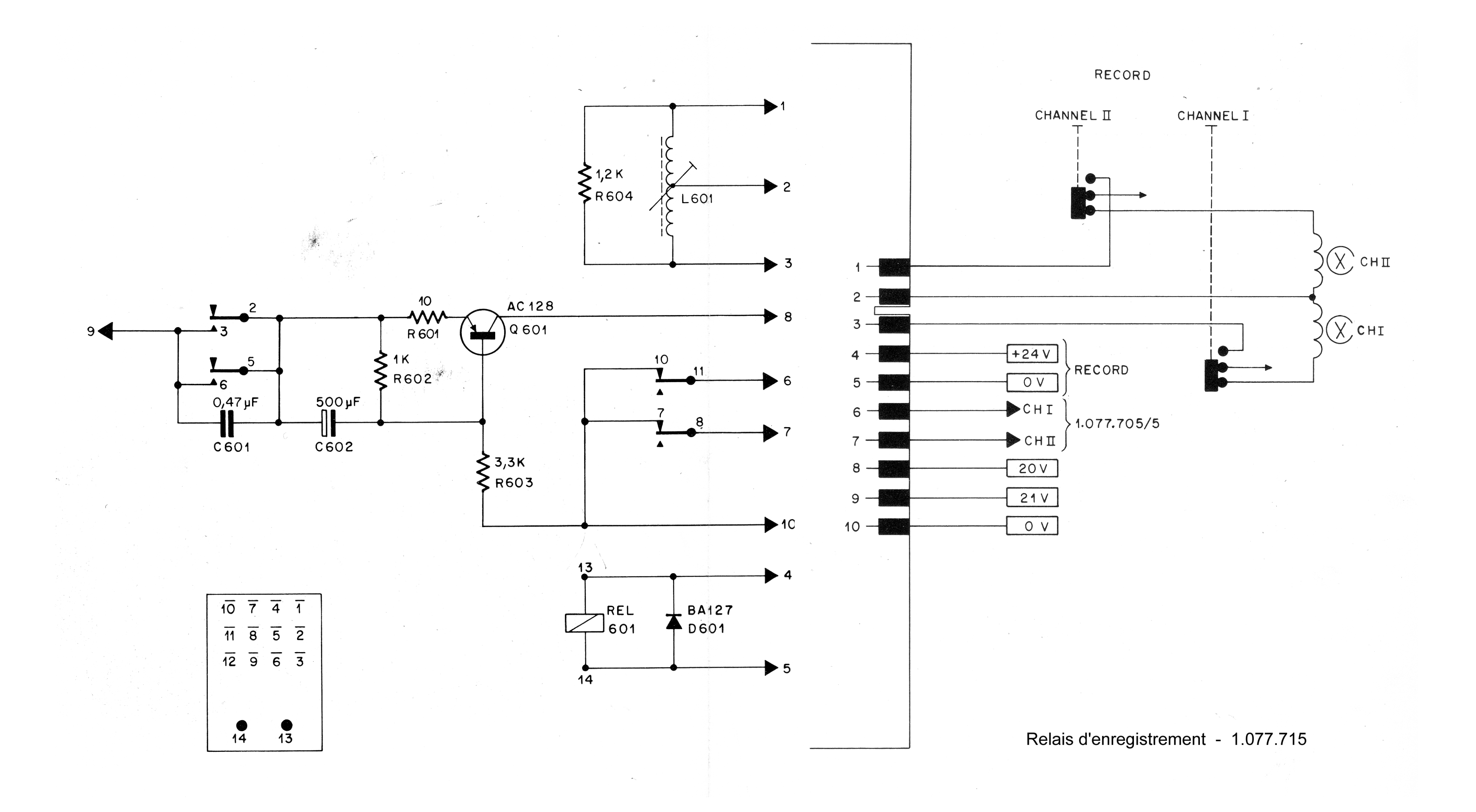
Amplificateur de haut-parleur
avec transistors de puissance SDT 9201

Loudspeaker Amplifier
Amplificateur de haut-parleur

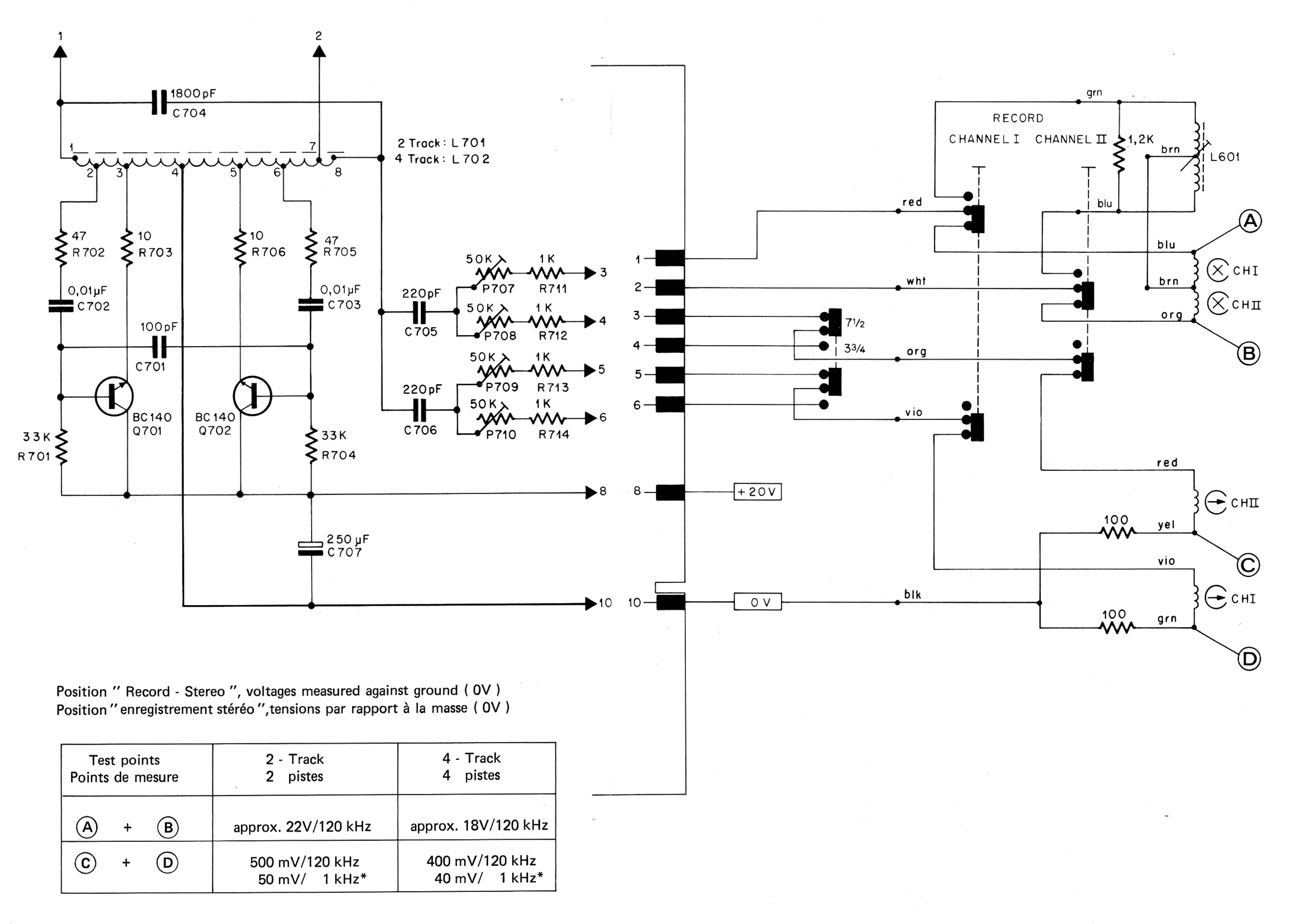
1.077.850


Régulation de vitesse - 1.077.725
V
10V
t
10V
E
+21V
yel ED1
10
R226
Tacho
E1
brn
blu
E2
C202
0,022μF
A
0,1μF
C201
22K
R201
0,47μF
C203
BC108
Q201
9,5V
10K
R202
1,8K
R203
100K
R204
2,2K
R205
330
R206
BC178
Q202
10K
R207
10K
R208
Q203
BC107
10K
R209
47
R210
BC108
Q204
Q205
BC178
+11V
25μF
C204
2,2K
R211
T201
3
2
1
D204
BA127
10K
±2%
R212
8,2K
±2%
R213
BA127
D203
0,068μF
±1%
C207
1200pF
±1%
C205
0,022μF
±1%
C206
1K
P201
+0,8V
150
R215
250μF
C209
25μF
C210
B
4,7K
R217
2,2K
R218
Q206
BC108
5,6K
R219
68
R216
1K
R220
2,2K
R221
C
Q207
BC108
2,2K
R222
10μF
C211
1K
R223
1,5K
R224
Q208
BC178
1K
R225
250μF
C212
E
Q209
40 318
D
22
R227
0,47μF
C213
BY123
D205
blu E8
130V~
(150V~)
grn E4
blk E7
blk EJ1
3,5μF
160V~
vio E5
wht E6
yel E3
grn
ED2
0V
Normal Operating Voltage 60-100V~
Tension de service normale 60-100V~
M
0,1μF
C208
BA127
D201
BA127
D202
1,5K
R214
red AE1
+21V
7½
3¾


19 V
21 V
100 K
R 802
100 K
R 803
12 K
R 805
3,3 µF
C 804
+13 V
0,01 µF
C 805
330 K
R 808
BC 109
Q 802
1 K
R 813
BC 109
Q 801
68
R 806
4,7 K
R 809
2,2 K
R 810
+0,6 V
220 K
R 801
100 pF
C 806
3,3 µF
C 802
330 pF
C 801
1000 pF
C 807
4,7 K
R 811
1600 µF
C 803
220
R 804
1 K
R 807
6,8 K
R 812
390 pF
C 808
L 801
3300 pF
C 809
20 K
P 801
150 K
R 816
10 K
R 818
BC 108
Q 805
BC 108
Q 804
100 pF
C 812
BC 109
Q 803
25 µF
C 813
10 µF
C 814
+14 V
330
R 814
150 K
R 815
68
R 819
22 K
R 822
+0,6 V
3,3 µF
C 810
100 µF
C 811
330
R 817
1 K
R 820
1 K
R 821
20 mV
20 mV
CH I
CH II
47K
150 pF
S6
7½ ⟷ 3¾
S5
INPUT
NAB
IEC
S2
25K
STEREO
CH. I
CH. II
MONO
S1
250K
CROSSTALK COMPENS.
COMPENS. DIAPHONIE
47K
25K
19 V
0 V
21 V
3 V
25K
BAL
3,3 µF
6,8 K
SPEAKERS
OFF
1.077.850
390
PHONES
560
OUTPUT
4,7K
4,7K
RADIO
Test points :
A 2 - Track approx. 200 mV, 4 - Track approx. 140 mV } 1 kHz, full modulation
B Balance, Control Range ± 7 dB
Points de mesure :
A 2 pistes env. 200 mV, 4 pistes env. 140 mV } à 1 kHz et modulation maximum
B plage de réglage de la balance ± 7 dB
Playback Amplifier
Amplificateur de lecture
1.077. 720
Diag. 8



Relais d'enregistrement - 1.077.715



Position " Record - Stereo ", voltages measured against ground (0V)
Position " enregistrement stéréo ", tensions par rapport à la masse (0V)

Test points Points de mesure	2 - Track 2 pistes	4 - Track 4 pistes
(A) + (B)	approx. 22V/120 kHz	approx. 18V/120 kHz
(C) + (D)	500 mV/120 kHz 50 mV/ 1 kHz*	400 mV/120 kHz 40 mV/ 1 kHz*

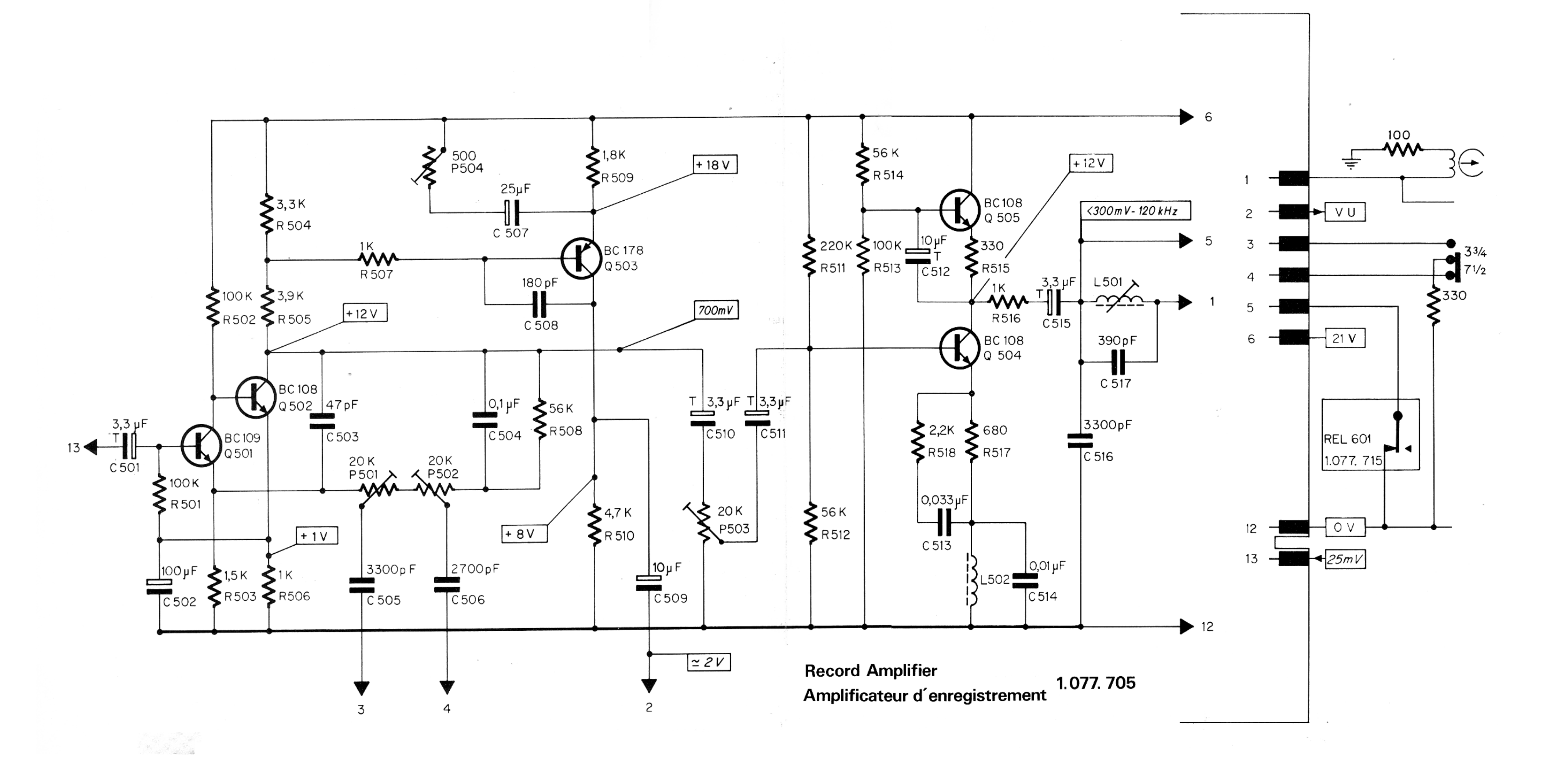
* AF - Test (oscillator pulled out), full modulation
* mesure BF (oscillateur retiré), modulation maximum

Test values (C) and (D) depend on type and speed of tape; they are to be considered nominal.

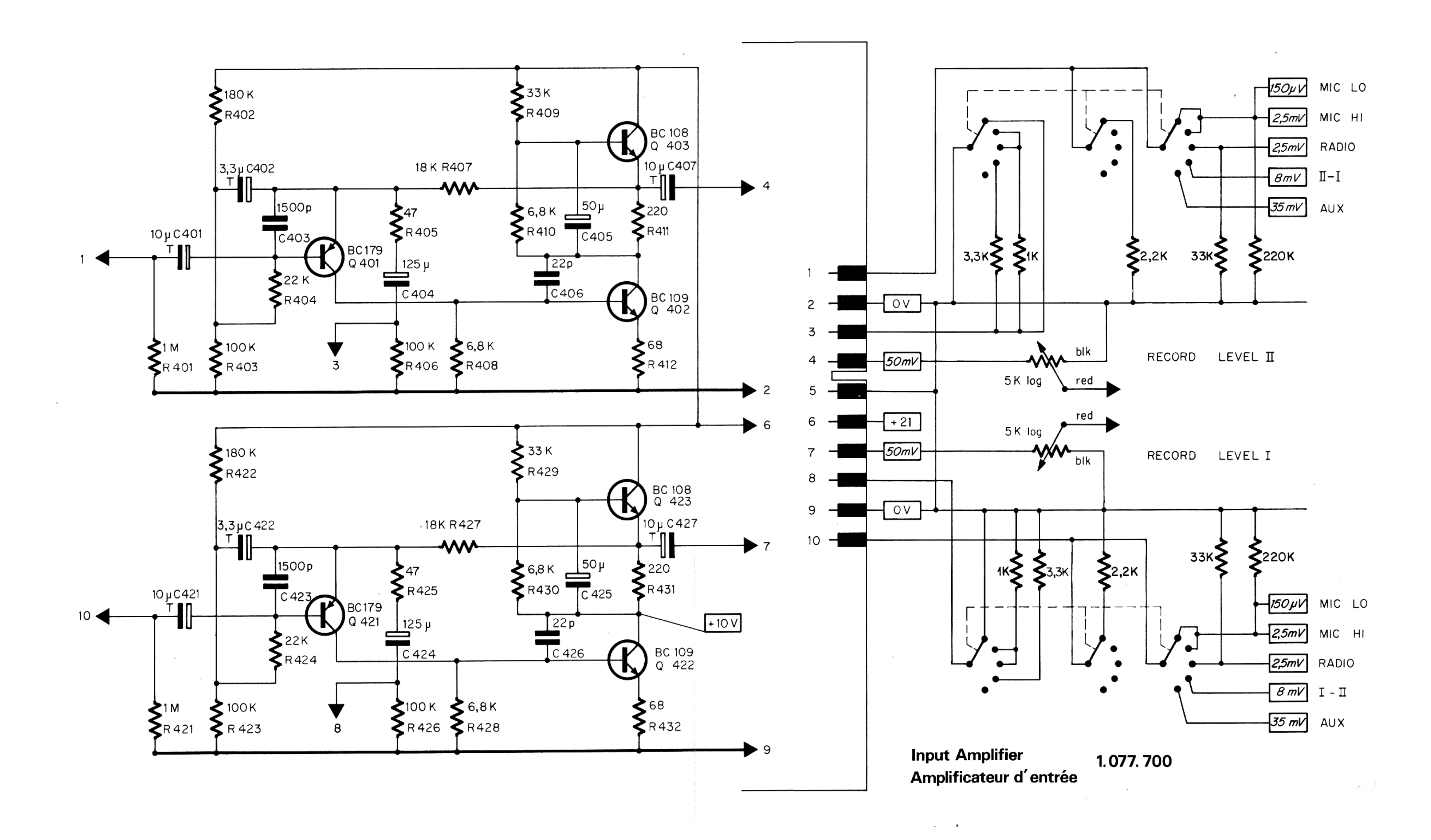
Les tensions aux points (C) et (D) diffèrent suivant le type et la vitesse de la bande; les valeurs indiquées sont nominales.

Oscillator
Oscillateur

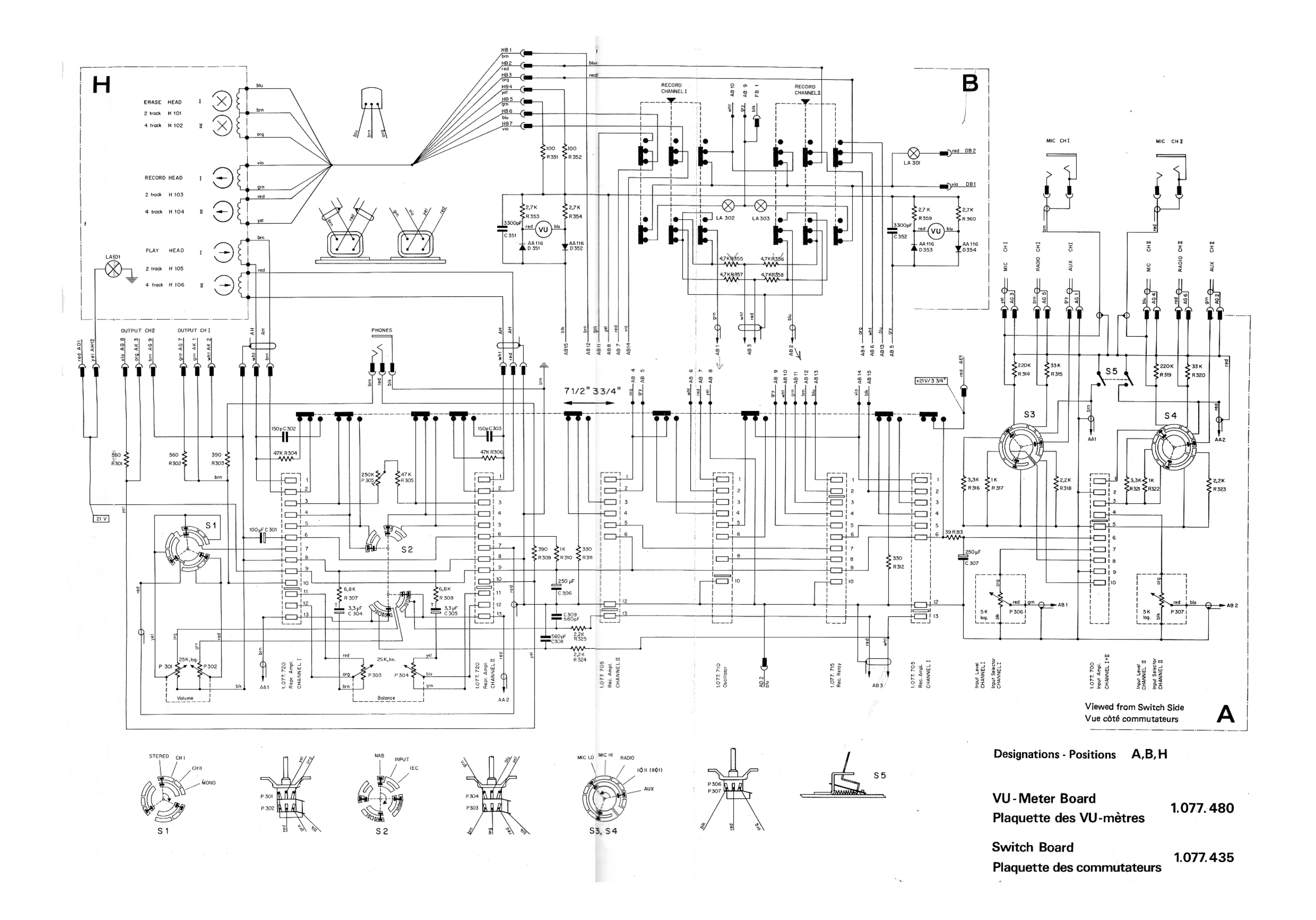
1. 077. 710

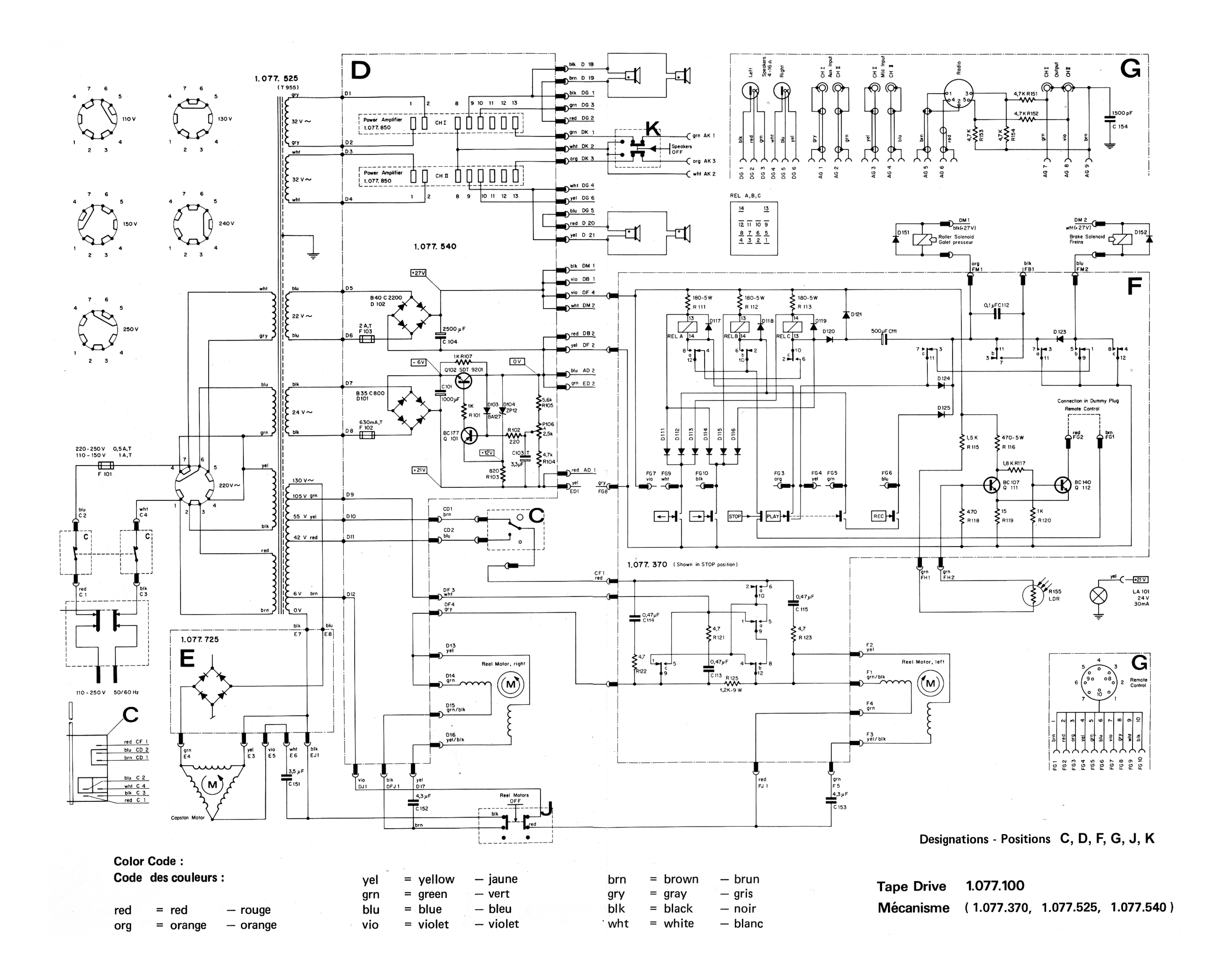


Record Amplifier
Amplificateur d´enregistrement
1.077. 705



Input Amplifier
Amplificateur d'entrée
1.077.700


H
ERASE HEAD
2 track H 101
4 track H 102
RECORD HEAD
2 track H 103
4 track H 104
PLAY HEAD
2 track H 105
4 track H 106
LA101
B
RECORD CHANNEL I
RECORD CHANNEL II
LA 301
LA 302
LA 303
MIC CH I
MIC CH II
OUTPUT CH II
OUTPUT CH I
PHONES
7 1/2" 3 3/4"
S1
S2
S3
S4
S5
Volume
Balance
1.077.720 Repr. Ampl. CHANNEL I
1.077.720 Repr. Ampl. CHANNEL II
1.077.705 Rec. Ampl. CHANNEL II
1.077.710 Oscillator
1.077.715 Rec. Relay
1.077.705 Rec. Ampl. CHANNEL I
Input Level CHANNEL I
Input Selector CHANNEL I
1.077.700 Input Ampl. CHANNEL I+II
Input Level CHANNEL II
Input Selector CHANNEL II
Viewed from Switch Side
Vue côté commutateurs
A
STEREO
CH I
CH II
MONO
NAB
INPUT
IEC
MIC LO
MIC HI
RADIO
AUX
S 1
S 2
S3, S4
S5
Designations - Positions A,B,H
VU-Meter Board
Plaquette des VU-mètres
1.077.480
Switch Board
Plaquette des commutateurs
1.077.435

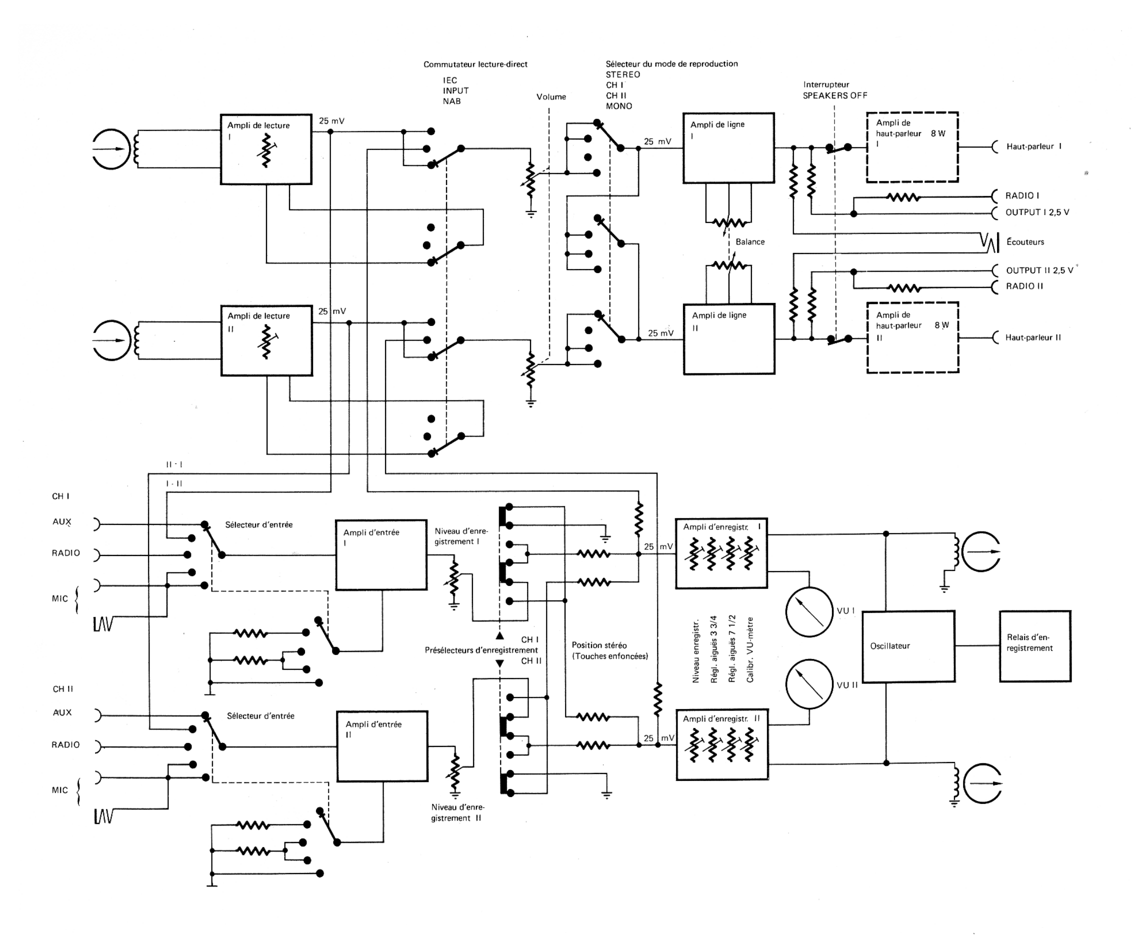


Designations - Positions C, D, F, G, J, K

Color Code :
Code des couleurs :

red = red — rouge
org = orange — orange
yel = yellow — jaune
grn = green — vert
blu = blue — bleu
vio = violet — violet
brn = brown — brun
gry = gray — gris
blk = black — noir
wht = white — blanc

Tape Drive 1.077.100
Mécanisme (1.077.370, 1.077.525, 1.077.540)

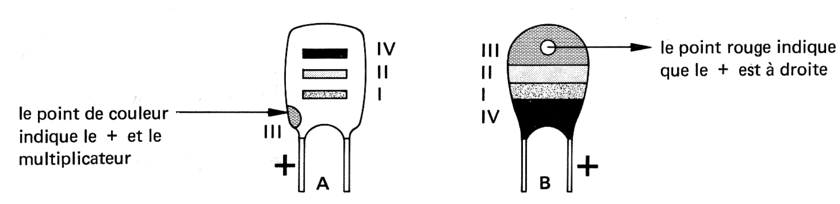


Conditions générales de mesure : (pour les tensions encadrées)

Tensions continues: caractères droits, ex. [+ 18 V] voltmètre à résistance interne minimum de 20 kΩ / V

Tensions basse-fréquence: caractères inclinés, ex. [*25mV*] voltmètre à lampes ou à transistors d'au moins 1 MΩ d'impédance d'entrée.

Marquage des condensateurs électrolytiques au tantale



Couleur (rose * *)	Capacité en μF			Tension de service IV
	1er chiffre I	2ème chiffre * II	Multiplicateur III	
noir	—	0	x 1	10 V
brun	1	1	x 10	—
rouge	2	2	—	—
orange	3	3	—	35 V * *
jaune	4	4	—	6 V
vert	5	5	—	15 V
bleu	6	6	—	20 V
violet	7	7	—	—
gris	8	8	x 0,01	25 V
blanc	9	9	x 0,1	3 V

* le 2ème chiffre peut manquer pour le modèle B

* * rose = 35 V pour le modèle A